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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

SHINGLETON, MICHAEL B

ART UNIT	PAPER NUMBER
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2815

MAIL DATE	DELIVERY MODE
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04/27/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/561,532	Applicant(s) DEKKER ET AL.	
	Examiner Michael B. Shingleton	Art Unit 2815	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 February 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-7,9 and 11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3-7, 9 and 11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

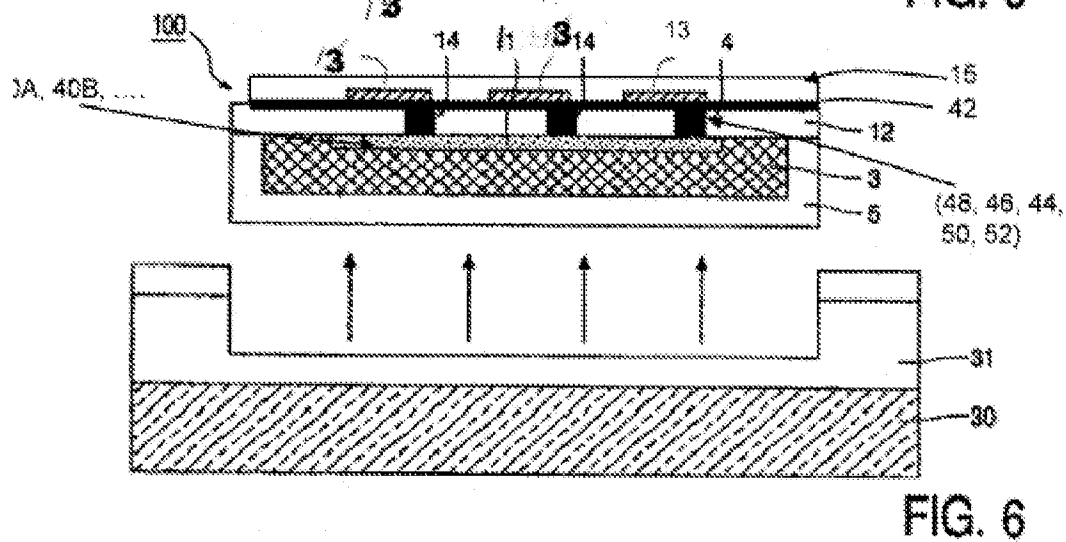
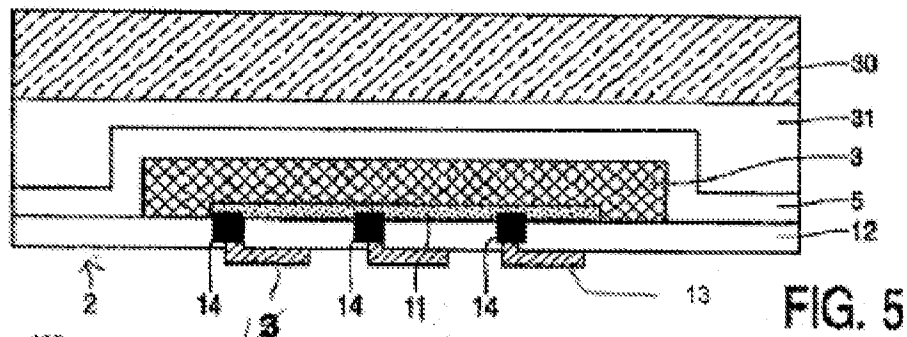
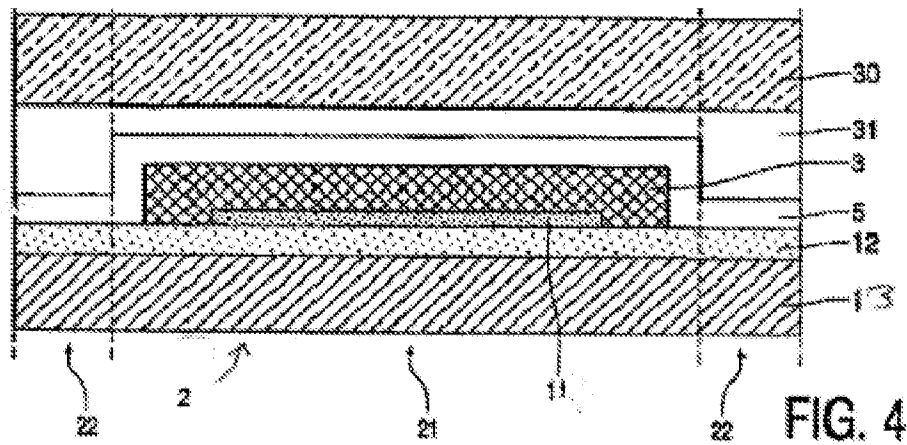
Claim Rejections - 35 USC § 112

Claims 1, 3-7, 9 and 11 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Newly proposed drawings and the specification contain new matter that is required to be cancelled in response to this office action. Specifically, one issue of new matter rests in the functional layer now indicated as 15 in the newly submitted drawings. There is absolutely no support for this in the original disclosure. In fact the original disclosure as well as the newly presented drawings clearly prove beyond any doubt that this "15" cannot be the functional layer. Here's why; in the marked up copy of the specification it states:

After that metal is provided in the apertures 14.

The originally Figures and the newly proposed figures clearly show what applicant now refers to as "functional layer 15" as being composed of exactly the same material as that in the apertures 14 which as noted above can only be metal (Note the cross hatching.). That's the original disclosure. And the specification has now been amended to say that the newly indicated 13/15 are base layer which is old element 13 and new element number 40A,40B. Showing two different compositions for the previously submitted "14" and "15" does not correspond to the original disclosure and is in fact contradictory to the original and thus is new matter. Also element 42 is new matter as well.

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Thus there is absolutely no question that what applicant now points to as element 15 can only be that of metal which makes the newly added subject matter reciting that the functional layer is by example

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includes electro-optical layers, etc. is clearly new matter never before presented. Note the new matter below of element 15 :

15

20 In addition, FIG. 5 schematically illustrates, in generic form, a functional layer 15 present on the second side 2 of the insulating layer 12. The term 'functional layer' is to be understood to mean a layer that extends over a substantial part of the substrate area and which fulfills in the device, alone or in combination with the switching elements in the active layer 11, a specific function. Examples include electro-optical layers, conductive layers in which antennas are defined, high-K dielectric layers, such as ferroelectric layers for capacitors, layers for sensor applications, such as adhesion layers comprising antibodies for the adhesion of peptides, proteins or other biological material.

Other examples of new matter include:

material in view of the excellent flexibility of such materials. Suitable materials include among others epoxide, phenol, melamine, polyester, silicon resin or a polymer or copolymer hereof or a blend with other polymers, and may be reinforced with fibers, pigments, fillers, glass or metal. Preferably, the layer-flexible coating 3 is provided by

and

spin coating, spraying or the formation of a film, and is subsequently cured. The coating 3 typically has a thickness of the order of from 1 to 50 μm , preferably from 2 to 5 μm .

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the following must be shown or the feature(s) canceled from the claim(s).

1. The drawings do not show at least one switching element and especially one that has an "electrode" in the active layer as is set forth by at least claim 1. As shown in the original disclosure and original Figures 1-6 the active layer 11 is totally removed in the final product (Figures 5 and 6) and also from the original disclosure and original drawings the active layer 11 is totally removed before any

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apertures like 14 are formed in the oxidic layer 12. Thus the electrode material formed in the aperture 14 that extends on the side opposite base layer 13 cannot and is not the first electrode. Newly proposed Figure 7 has the “lower” electrode 50 listed in the proposed amendment to the specification as “another electrode”. There is no indication that “another electrode” is the “first electrode” as set forth by the claims.

3. The capacitor (clm. 5). There is no showing of the capacitor.

4. There is still no array of switching elements shown (clm. 7). This repeated failure to show these elements while still retaining them in the claims may result in the possible abandonment of the instant application. Note that numerous previous office actions pointed this out to avoid abandonment of the application and while the present response is viewed as a boni-fide attempt future attempts will probably not be viewed as such.

No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because there are two different parts shown in newly presented Figure 7 that have the character “50” (Note the upper and lower number 50’s.). Different parts cannot have the same reference number See MPEP 608.02 and 37 CFR 1.84. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the

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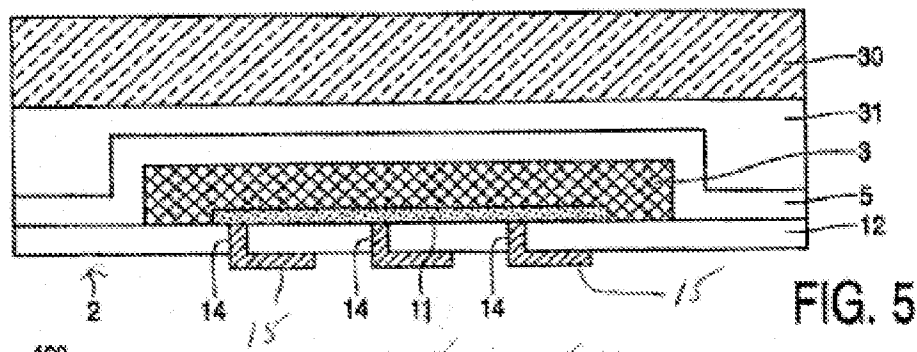
top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

New Matter

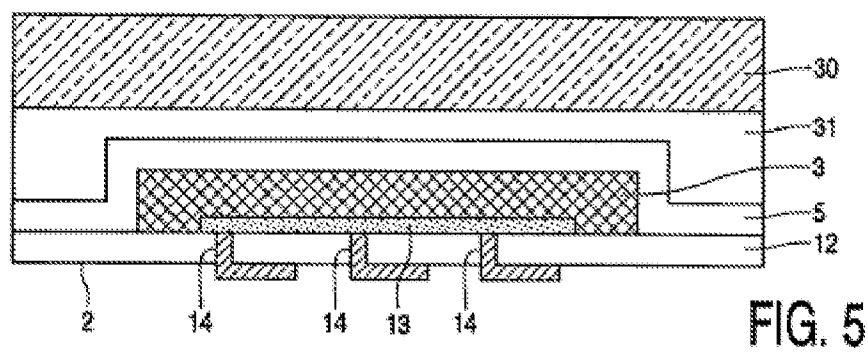
The previous amendment believed to be filed in February of '09 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: Newly proposed drawings and the specification contain new matter that is required to be cancelled in response to this office action. Specifically, one issue of new matter rests in the functional layer now indicated as 15 in the newly submitted drawings. There is absolutely no support for this in the original disclosure. In fact the original disclosure as well as the newly presented drawings clearly prove that this cannot be the functional layer. Here's why. In the marked up copy of the specification it states:

After that metal is provided in the apertures 14.

The originally Figures and the newly proposed figures clearly show what applicant now refers to as "functional layer 15" as being composed of exactly the same material as that in the apertures 14 which as noted above can only be metal (Note the cross hatching.). That's the original disclosure.



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Thus there is absolutely no question that what applicant now points to as element 15 can only be that of metal which makes the newly added subject matter reciting that the functional layer is by example includes electro-optical layers, etc. is clearly new matter never before presented. Note the new matter below of element 15 :

12

In addition, FIG. 5 schematically illustrates, in generic form, a functional layer 15 present on the second side 2 of the insulating layer 12. The term 'functional layer' is to be understood to mean a layer that extends over a substantial part of the substrate area and which fulfills in the device, alone or in combination with the switching elements in the active layer 11, a specific function. Examples include electro-optical layers, conductive layers in which antennas are defined, high-K dielectric layers, such as ferroelectric layers for capacitors, layers for sensor applications, such as adhesion layers comprising antibodies for the adhesion of peptides, proteins or other biological material.

Other examples of new matter include:

material in view of the excellent flexibility of such materials. Suitable materials include among others epoxide, phenol, melamine, polyester, silicon resin or a polymer or copolymer hereof or a blend with other polymers, and may be reinforced with fibers, pigments, fillers, glass or metal. Preferably, the layer-flexible coating 3 is provided by

and

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spin coating, spraying or the formation of a film, and is subsequently cured. The coating
3 typically has a thickness of the order of from 1 to 50 μm , preferably from 2 to 5 μm .

Applicant is required to cancel the new matter in the reply to this Office Action.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1 and 9 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Matsumoto US 6,798,679 (Matsumoto).

Claim 1 is so so extremely broad. First of all applicant still has not provided a proper drawing to an invention where the functional layer is on the “second side of the substrate”. What applicant now points to as element 15 is composed of the same exact material as that of 14 with is pure conductor as presented by the original disclosure. This just cannot be the functional layer, period. Again what was shown in the original disclosure was that of pure conductor and thus there continues to be clear new matter that must be cancelled in response to this office action. However, as stated above claim 1 is so so so extremely broad.

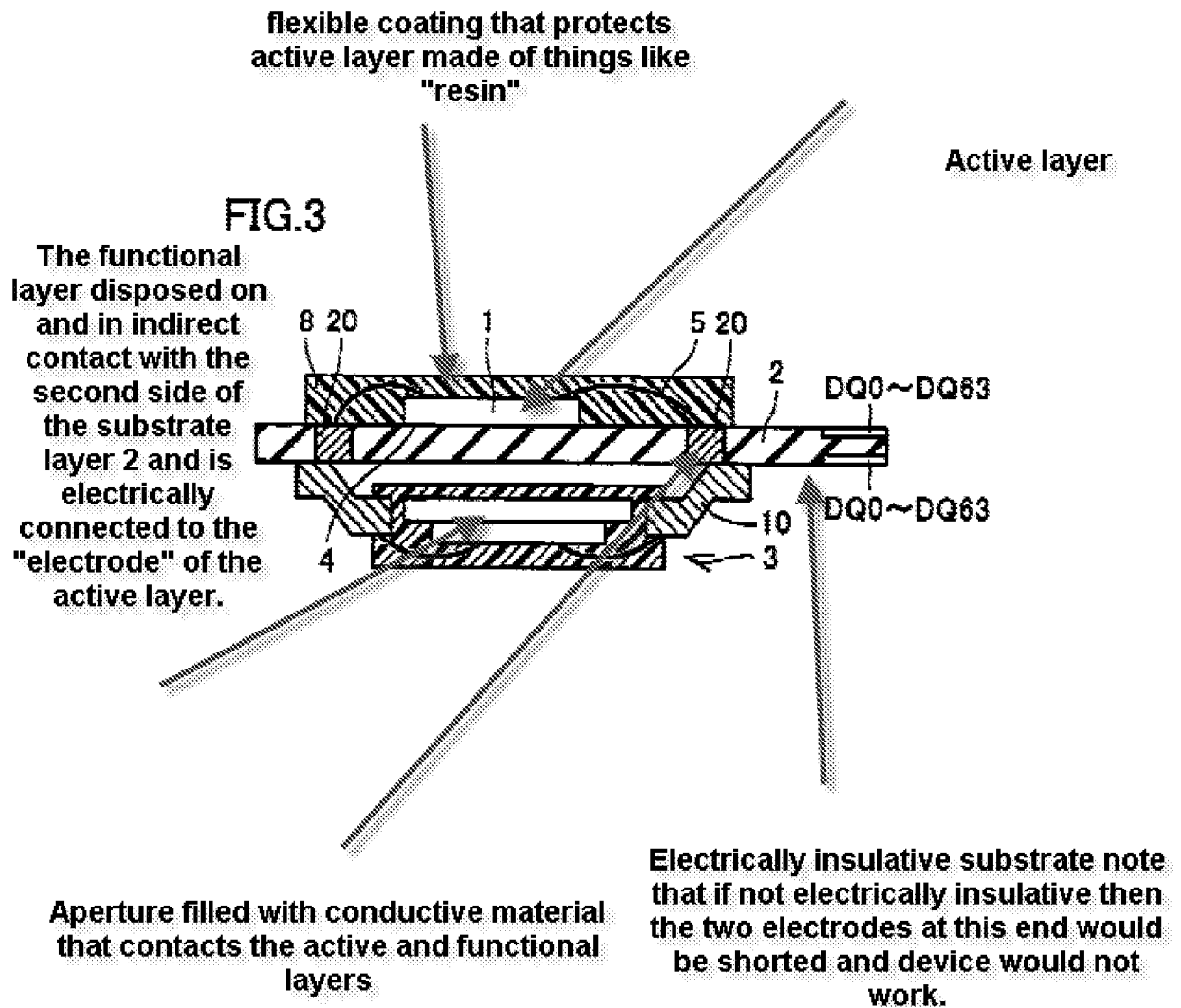
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In essence claim 1 has a circuit on one side and a circuit on the other side of a substrate with a through hole connecting the two circuits. The only other thing added besides just stated is that there is a "flexible coating" formed on the "first side" of the substrate acting as a protective cover. Applicant should be well aware of the numerous flexible circuit boards that exist with through holes where the active or functional elements(layers) are mounted on both sides of the flexible circuit board and connected to each other via the through holes. More "rigid" versions like motherboards common in computers also are commonly known to exist with active and functional layers but all versions are flexible to some degree and applicant just has not claimed nor is there any support in the original disclosure to the degree, i.e. just how flexible is flexible as meant by applicant. The examiner wants to help applicant as much as possible to get to allowable subject matter and because there is no support for the degree of flexibility the examiner cannot suggest a limitation as to the degree as this would introduce new matter into the specification that has already been plagued with numerous errors. Matsumoto has been provided to show that the invention as set forth in claim 1, notwithstanding the new matter that exists in the present application, is anticipated by the prior art. The following reproduced drawing should make it clear that claim 1 is clearly anticipated but a few points are discussed as well to further emphasize this point. Applicant says that the active layer includes "at least one switching element". Well many things can be consider a "switching element" and as Matsumoto intends to use memory chips as the active layer the memory devices contained therein can be called "switching elements" as there state i.e. a 1 of a 0 is switchable. Resin is clearly flexible and is listed as one of the "flexible materials" by applicant. The term "monolithic" is likewise very broad. Clearly even applicant's invention is not "formed from a single crystal". Applicant's invention it is like that of Matsumoto "consisting of or constituting a single unit" i.e. monolithic. Should applicant like to have the examiner read a term like "monolithic" much more narrowly than is common practice then applicant should be aware of the recent case-law of Halliburton Energy Services, Inc v M-I LLC, Fed. Cir, 2007-1149 that states: **"[b]ecause claims delineate the patentee's right to exclude, the patent statute requires that the scope of the claims be sufficiently definite to inform the public of the bounds of the protected invention, i.e., what subject matter is covered by the exclusive rights of the patent. Otherwise, competitors cannot avoid infringement, defeating the public notice function of the patent claims."** As recited in the above Halliburton decision the court says **"We note that the patent drafter is in the best position to resolve ambiguity in the patent claims, and it is highly desirable that the patent examiners demand that applicants do so in appropriate circumstances so that the patent can be amended during prosecution rather than attempting to resolve the ambiguity in litigation."** Also note that the Halliburton decision relates to the situation where applicant is very

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specific as to specific limitations on structure that has already been “seen” and then the claims seems to recite functional language “at the exact point of novelty”. Many times these types of claims are indefinite. Again the Halliburton decision states: Claims could be held indefinite “**when the inventor is painstaking when he recites what has already been seen, and then uses conveniently functional language at the exact point of novelty**”. The Halliburton decision recited two Supreme Court cases that “identified the dangers of using only functional claim limitations to distinguish the claimed invention from the prior art” and these are General Electric, 304 U.S. at 371 and United Carbon, 317 U.S. at 234. What is needed in this application is clear limitations to positive structure in the claims that can distinguish the claimed invention over the prior art, i.e. the claimed positive limitations to structure that will not read on the prior art and as stated above applicant is in the best position to resolve ambiguity in the patent claims for the examiner just cannot read limitations into a claim that are just not there.

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Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3-7, 9 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dudoff US 6,724,794 (Dudoff) in view of Brown US 4,729,061 (Brown).

Figures 1 and 2 of Dudoff discloses the basic arrangement of applicant's invention that includes an active layer i.e. electronic wafer and a functional layer, i.e. laser and/or detector composed of electro-optical elements. These two elements the active and functional layer are attached to each other and the difference between the claimed invention and the prior art rest primarily in how these two "layers" as attached and the showing of a so called "flexible" coating i.e. protective cover for the active layer.

Brown on the other hand shows that an insulating layer with at least one aperture can be and is used to connect two active/functional devices together one on top the other. Plain and simple it is just an art recognized equivalent way to connect two active/functional devices together one on top the other known to those of routine skill in the art. Brown also teaches that a resin 158 can be used to cover or protect at least one of the active/functional layers.

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the direct metal bonding from the active to the functional layers of Dudoff with that of an insulative substrate with at least one through hole which is not only an art recognized equivalent way to connect and active layer and a functional layer together as taught by Brown but it also allows for many different type of active and functional layers to be stacked one on another as the contact pads do not have to exactly line up as in the Dudoff invention as taught also by the Brown reference. Furthermore It would have been obvious to one of ordinary skill in the art at the time the invention was made to cover at least the active or electronic wafer with a resin so as to protect it against the outside world like moisture, oxygen etc. as also taught by Brown and as is commonly known in the art. As to the formation of a capacitor thus naturally flows from the combination above.

As to claim 11 applicant wants to store the electronic device above in a "rollable cartridge". That is just purely intended use and it does not further limit the structure of the claim that claim 11 is dependent upon. It is like taking a commercially made 741 chip or the like and placing the chip in a old 35mm film rollable cartridge or it is like putting your dinner leftovers in a plastic container. The examiner does not see any patentability in how one wants to store, i.e. use a chip or device as these cartridges, i.e. storage containers, are know for storing things.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Note that Wang et al. US2004/0245538 shows an optoelectronic device with the common arrangement

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where the circuitry is formed on one side and the opto stuff on the other. Typical of other imager structures, however, Wang uses optical communication between the active and functional layers.

Claims 1 and 3-5 are rejected under 35 U.S.C. 102(b) as being anticipated by Lee et al. US 2002/0050599 (Lee).

The reasoning of the office dated 4-14-2008 involving the rejection of claims 1 and 3-5 under Lee is hereby repeated in this office action and accordingly applicant is referred to the office action dated for details thereof. The present examiner agrees with the same reasoning as presented by the pervious examiner in the office action dated 4-14-2008 except for the flexible coating limitation. This change of position involving the flexible coating is because of applicant's amendment made to claim 1. As noted above the layer 3 does not cover the at least one switching element if the at least one switching element is formed in the layer 11. Therefore the upper substrate 9 of Lee being flexible and formed on the second side is every much a protective cover for the at least one switching element as layer 3 is for applicant.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3-7 and 9 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Murade US 6,750,924 (Murade) and in further view of Lee.

The reasoning of the office dated 4-14-2008 involving the rejection of claims 1, 3-5, 7 and 9 under Lee is hereby repeated in this office action and accordingly applicant is referred to the office action dated for details thereof. The present examiner agrees with the same reasoning as presented by the pervious examiner in the office action dated 4-14-2008 except for the flexible coating limitation. This change of position involving the flexible coating is because of applicant's amendment made to claim 1. As noted above the layer 3 of the instant application does not cover the at least one switching element if the at least one switching element is formed in the layer 11. Therefore the upper substrate of Murage being flexible and formed on the second side is every much a protective cover for the at least one switching element as layer 3 is for applicant.

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With respect to claim 6 here applicant recites that the insulating layer is provided with a high-k area. What exactly is "high-K" is unclear. Accordingly, the insulating layer is considered to be of high-k material and thus anticipates this limitation. However, alternatively clearly Murade is not to be limited to but a single example of material for the insulating layer, other conventional insulating materials especially of high-k can be used as these are art recognized equivalents.

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the insulating layer material of Murade with High-k material as such material is an art recognized equivalent to that of Murade and the higher the K the less material needed to made a capacitance of the same value as compared to a lower k material.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Murade (and Lee) and in further view of E Ink Corp (WO 02/073572) (E ink).

Applicant is referred to the reasoning as presented in the Office action 4-14-2008 concerning this claim 11 as such reasoning applies here.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Applicant's arguments with respect to the claims of record have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael B. Shingleton whose telephone number is (571) 272-1770.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ken Parker, can be reached on (571) 272-2298. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in cursive script that reads "Michael B. Shingleton". The signature is written in a dark ink and is positioned in the center-right of the page.

MBS
Sept. 11, 2008
April 10, 2009
November 5, 2009

/Michael B. Shingleton/
Michael B Shingleton

Primary Examiner
Group Art Unit 2815